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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/649,160	08/28/2000	Ed A. Schrock	3084.SUS(96-1050.5)	6838

7590

04/25/2003

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EXAMINER

KESHAVAN, BELUR V

ART UNIT PAPER NUMBER

2825

DATE MAILED: 04/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/649,160

Applicant(s)

SCHROCK, ED A.

Examiner

Belur V Keshavan

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2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 3 February 2003 (Supplemental IDS).
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-8 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12. 6) ☐ Other:

## **DETAILED ACTION**

### ***Supplemental Information Disclosure Statement***

Applicant filed on 6 February 2003 a supplemental Information Disclosure Statement, which is entered, paper 12, after the mailing date of the Notice of Allowance, but before payment of the issue fee.

The reference cited in Form PTO-1449 is considered by the Examiner and is made of record.

### ***Prosecution Reopened***

Prosecution on the merits of this application is reopened on claims 1 – 8.

### ***Objection***

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Nguyen (U.S. Patent No. 5,155,066).

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Regarding claim 1, Nguyen teaches in columns 3 –7 and in claim 1, a method of attaching a semiconductor die to a lead frame comprising; providing a source of snap curable adhesive (rapidly curable adhesive); providing a source of lead frames, each lead frame having an attaching surface; providing a source of semiconductor die having an active surface; applying the snap curable adhesive to a portion of one of the lead frames; and contacting the active surface of one of the semiconductor die with one of the lead frames with the snap curable adhesive thereon.

Regarding claim 2, Nguyen teaches, in column 7 and lines 14 – 16, heating one of the semiconductor die;

Regarding claim 4, Nguyen discloses in column 7 and lines 41-42, that the snap curable adhesive has a cure time of substantially one minute or less.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 6, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen.

Regarding claim 3, Nguyen anticipates claim 1 as given above but lacks snap curable epoxy having a cure time of about one second or less. In the specification, on page 16 and lines 15-17, Applicant describes commercially available snap curing 505 epoxy formula with curing time less than 1 second. It would have been obvious to a person of ordinary skill in the art at the

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time the invention was made to use the teachings of Nguyen and use commercially available snap curing 505 epoxy to bond semiconductor dice to lead frames to increase the production rate of bonded semiconductor dice.

Regarding claims 6 and 8, Nguyen discloses all the features of claims 6 and 8 in claim 1 except the limitation of applying the snap curable adhesive to a portion of the active surface of one of the semiconductor dice in a predetermined pattern. The applicant has not disclosed that the application of snap curable adhesive to a portion of the active surface of one of the semiconductor die in a predetermined pattern solves any stated problem or is for any particular purpose and therefore it appears that the invention would perform equally well with the application of snap curable adhesive to one of the lead frames. It would have been obvious matter of choice to apply the snap curable adhesive to a portion of the active surface of one of the semiconductor die in a predetermined pattern.

Regarding claim 7, Nguyen discloses in column 7 and lines 41-42, that the snap curable adhesive has a cure time of substantially one minute or less which includes a time less than one second or less.

103 > Claims Nguyen in view of Japan '156 or Evers  
It is notoriously well known to one of ordinary skill in the art  
of which the examiner takes official Notice. to use roller to apply  
the adhesive. In support of  
this assertion the examiner  
Cites

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Belur V Keshavan whose telephone number is 703 306 5985. Evers (612, 102)

The examiner can normally be reached on 8-4:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 703 308 1323. The fax phone numbers for the

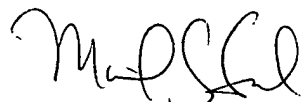
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organization where this application or proceeding is assigned are 703- 872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

Bvk. *YRK*  
March 25, 2003.

Belur V. Keshavan  
Examiner. Art Unit 2825.

  
MATTHEW SMITH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800